

**SECTION 08 71 00
DOOR HARDWARE**

PART 1 - GENERAL

1.1 DESCRIPTION

Door hardware and related items necessary for complete installation and operation of doors.

1.2 RELATED WORK

- A. Caulking: Section 07 92 00 JOINT SEALANTS.
- B. Application of Hardware: Section 08 14 00, WOOD DOORS Section 08 11 13, HOLLOW METAL DOORS AND FRAMES, Section 08 71 13, AUTOMATIC DOOR OPERATORS
- C. Finishes: Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Painting: Section 09 91 00, PAINTING.

1.3 GENERAL

- A. All hardware shall comply with UFAS, (Uniform Federal Accessible Standards) unless specified otherwise.
- B. Hardware for Labeled Fire Doors and Exit Doors: Conform to requirements of NFPA 80 for labeled fire doors and to NFPA 101 for exit doors, as well as to other requirements specified. Provide hardware listed by UL, except where heavier materials, large size, or better grades are specified herein under paragraph HARDWARE SETS. In lieu of UL labeling and listing, test reports from a nationally recognized testing agency may be submitted showing that hardware has been tested in accordance with UL test methods and that it conforms to NFPA requirements.
- C. Hardware for application on metal and wood doors and frames shall be made to standard templates. Furnish templates to the fabricator of these items in sufficient time so as not to delay the construction.
- D. The following items shall be of the same manufacturer, if possible, except as otherwise specified:
 - 1. Mortise locksets.
 - 2. Hinges for hollow metal and wood doors.
 - 3. Surface applied overhead door closers.
 - 4. Exit devices.
 - 5. Floor closers.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

B. Hardware Schedule: Prepare and submit hardware schedule in the following form:

Hardware Item	Quantity	Size	Reference Publication Type No.	Finish	Mfr. Name and Catalog No.	Key Control Symbols	UL Mark (if fire rated and listed)	ANSI/BHMA Finish Designation

C. Samples and Manufacturers' Literature:

1. Samples: All hardware items (proposed for the project) that have not been previously approved by Builders Hardware Manufacturers Association shall be submitted for approval. Tag and mark all items with manufacturer's name, catalog number and project number.
2. Samples are not required for hardware listed in the specifications by manufacturer's catalog number, if the contractor proposes to use the manufacturer's product specified.

D. Certificate of Compliance and Test Reports: Submit certificates that hardware conforms to the requirements specified herein. Certificates shall be accompanied by copies of reports as referenced. The testing shall have been conducted either in the manufacturer's plant and certified by an independent testing laboratory or conducted in an independent laboratory, within four years of submittal of reports for approval.

1.5 DELIVERY AND MARKING

Deliver items of hardware to job site in their original containers, complete with necessary appurtenances including screws, keys, and instructions. Tag one of each different item of hardware and deliver to Resident Engineer for reference purposes. Tag shall identify items by Project Specification number and manufacturer's catalog number. These items shall remain on file in Resident Engineer's office until all other similar items have been installed in project, at which time the Resident Engineer will deliver items on file to Contractor for installation in predetermined locations on the project.

1.6 INSTRUCTIONS

- A. Hardware Set Symbols on Drawings: Except for protective plates, door stops, mutes, thresholds and the like specified herein, hardware requirements for each door are indicated on drawings by symbols. Symbols for hardware sets consist of letters "HW" followed by a number. Each number designates a set of hardware items applicable to a door type.
- B. Manufacturers' Catalog Number References: Where manufacturers' products are specified herein, products of other manufacturers which are considered equivalent to those specified may be used. Manufacturers whose products are specified are identified by abbreviations as follows:

Adams-Rite	Adams Rite Mfg. Co.	Glendale, CA
Glynn Johnson	Glynn Johnson Co.	Chicago, IL
LCN	LCN Closers	Princeton, IL
Firemark	Rixon-Firemark Co.	Chicago, IL
Hager	Hager Hinge Company	Saint Louis, MO
Stanley	The Stanley Works	New Britain, CT
Trimco	Triangle Brass Mfg. Co.	Los Angeles, CA
Unican	Simplex Security Systems	Collinsville, CT
Von Duprin	Von Duprin Hardware Co.	Indianapolis, IN
Zero	Zero Weather Stripping Co.	New York, NY

- C. Keying: Door Hardware shall be capable of accepting Best 7 pin cylinders. Cylinders will be provided and installed by the government. Keying information shall be furnished at a later date by the Resident Engineer.

1.7 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only. In text, hardware items are referred to by series, types, etc., listed in such specifications and standards, except as otherwise specified.
- B. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):
- A156.1-00.....Butts and Hinges

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Door locks and latches shall be "BEST" finish and function as further specified in individual sections.

A. ANSI A156.1. The following types of butt hinges shall be used for the types of doors listed, except where otherwise specified:

1. Interior Doors: Type 8112 for doors 900 mm (3 feet) wide or less and Type A8111 for doors over 900 mm (3 feet) wide.
2. Automatic doors hung on butts, provide Type A2111 for exterior doors and aluminum doors, and Type A8111 for other doors.

B. See Articles "MISCELLANEOUS HARDWARE" and "HARDWARE SETS" for pivots and hinges other than butts specified above and continuous hinges specified below.

2.2 DOOR CLOSING DEVICES

Closing devices shall be products of one manufacturer.

2.3 OVERHEAD CLOSERS

- A. Conform to ANSI A156.4, Grade 1.
- B. Closers shall conform to the following:
 - 1. The closer shall have 50 percent adjustable closing force over minimum value for that closer and have adjustable hydraulic back check effective between 60 degrees and 85 degrees of door opening.
 - 2. Where specified, closer shall have hold-open feature.
 - 3. Size Requirements: Size closers in accordance with manufacturer's recommendations or provide multi-size closers, sizes 1 through 6.
 - 4. Material of closer shall be forged or cast iron or cast aluminum.
 - 5. Arm and brackets for closers shall be steel, malleable iron or high strength ductile cast iron.
 - 6. Closers shall have full size cover.
 - 7. Closers shall have adjustable hydraulic back-check and separate valves for closing and latching speed.

2.4 DOOR STOPS

- A. Conform to ANSI A156.16.
- B. Provide door stops wherever an opened door or any item of hardware thereon would strike a wall, column, equipment or other parts of building construction. For concrete, masonry or quarry tile construction, use lead expansion shields for mounting door stops.
- C. Where cylindrical locks with turn pieces or pushbuttons occur, equip wall bumpers Type L02251 (rubber pads having concave face) to receive turn piece or button.
- D. Substitute floor stops Type L02141 or L02161 as appropriate, when wall bumpers would not provide an effective door stop.
- E. Where drywall partitions occur, use floor stops, Type L02141 or L02161.
- F. Omit stops where floor mounted door holders are required and where automatic operated doors occur.
- G. Provide appropriate roller bumper for each set of doors (except where closet doors occur) where two doors would interfere with each other in swinging.
- H. Provide appropriate door mounted stop on doors in individual toilets where floor or wall mounted stops cannot be used.

- I. Provide door stops on doors where combination closer magnetic holders are specified.

2.5 OVERHEAD DOOR HOLDERS

Conform to ANSI Standard A156.8. Overhead holders shall be of sizes recommended by holder manufacturer for each width of door. Set overhead holders for 110 degree opening, unless limited by building construction or equipment.

2.6 LOCKS AND LATCHES

- A. Conform to ANSI A156.2. Locks and latches for doors 45 mm (1-3/4 inch) thick or over shall have beveled fronts. Latches shall be capable of accepting "Best" lock cylinder.
- B. In addition to above requirements, locks and latches shall comply with following requirements:
 - 1. Mortise Lock and Latch Sets: Shall be BEST L945 series, with 06 handle, 626 finish. Function shall be as indicated in hardware schedule.
 - 2. Auxiliary locks shall be as specified under hardware sets and conform to ANSI A156.5.

2.7 KEYS

- A. Keys will be government provided.

2.8 ARMOR PLATES, COMBINATION KICK-MOP PLATES AND DOOR EDGING

- A. Conform to ANSI Standard A156.6.
- B. Provide protective plates and door edging as specified below:
 - 1. Kick-mop plates and armor plates plastic or metal, Type J100 series, color as required. When wood grain plastic plates are specified in Section 09 06 00, SCHEDULE FOR FINISHES, grain plates shall run in same direction as grain of face veneer of wood doors.
 - 2. Provide kick-mop plates for both sides of each new door, except where noted as not required. Kick-mop plates shall be 200 mm (8 inches) high. On push side of doors where jamb stop extends to floor, make combination kick-mop plates 38 mm (1-1/2 inches) less than width of door, except pairs of metal doors which shall have plates 25 mm (1 inch) less than width of each door. Extend all other combination kick-mop plates to within 6 mm (1/4 inch) of each edge of doors. Kick mop plates shall butt astragals. For jamb stop requirements, see specification sections pertaining to door frames.

3. Kick-mop plates are not required on following door sides:
 - a) Armor plate side of doors;
 - b) Closet side of closet doors;
 - c) Storage side of doors to or from storage spaces; and
4. Armor plates for doors are listed under Article "Hardware Sets".
 Armor plates shall be 875 mm (35 inches) high and 38 mm (1-1/2 inches) less than width of doors, except on pairs of metal doors. Plates on pairs of metal doors shall be 25 mm (1 inch) less than width of each door. Where top of intermediate rail of door is less than 875 mm (35 inches) from door bottom, extend armor plates to within 13 mm (1/2 inch) of top rail. On doors equipped with panic devices, extend armor plates to within 13 mm (1/2 inch) of panic bolt cross bar.

2.9 EXIT DEVICES

- A. Conform to ANSI Standard A156.3. Exit devices shall be Grade 1; type and function are specified in hardware sets. Provide flush with finished floor strikes for vertical rod exit devices in interior of building. Trim shall have lever handles similar to locksets, unless otherwise specified.
- B. Exit devices for fire doors shall comply with Underwriters Laboratories, Inc., requirements for Fire Exit Hardware. Submit proof of compliance.

2.10 FLUSH BOLTS (LEVER EXTENSION)

- A. Conform to ANSI A156.16. Flush bolts shall be Type L24081 unless otherwise specified. Furnish proper dustproof strikes conforming to ANSI A156.16, for flush bolts required on lower part of doors. Modify flush bolts to fit stiles of aluminum doors on double-acting doors.
- B. Face plates for cylindrical strikes shall be rectangular and not less than 25 mm by 63 mm (1 inch by 2-1/2 inches).
- C. Friction-fit cylindrical dustproof strikes with circular face plate may be used only where metal thresholds occur.

2.11 FLUSH BOLTS (AUTOMATIC)

Conform to ANSI A156.16. Dimension of flush bolts shall conform to ANSI A115. Bolts shall conform to Underwriters Laboratories, Inc., requirements for fire door hardware. Flush bolts shall automatically latch and unlatch. Furnish dustproof strikes conforming to ANSI A156.16

for bottom flushbolt. Face plates for dustproof strike shall be rectangular and not less than 38 mm by 90 mm (1-1/2 by 3-1/2 inches).

2.12 DOOR PULLS

Conform to ANSI A156.6. Pull plate 90 mm by 350 mm (3-1/2 inches by 14 inches), unless otherwise specified. Cut plates of door pulls for cylinders, or turn pieces where required.

2.13 PUSH PLATES

Conform to ANSI A156.6. Plastic, Type J302, 200 mm (8 inches) wide by 350 mm (14 inches) high. Provide plastic Type J300 plates 100 mm (4 inches wide by 350 mm (14 inches) high) where push plates are specified for doors with stiles less than 200 mm (8 inches) wide. Color shall be as specified for kick-mop plates in Section 09 06 00, SCHEDULE FOR FINISHES. Cut plates for cylinders, and turn pieces where required. When wood grain plastic plates are specified in SCHEDULE FOR FINISHES Section, grain in plates shall run in same direction as grain of face veneer of wood doors.

2.14 COORDINATORS

Conform to ANSI A156.16. Coordinators, when specified for fire doors, shall comply with Underwriters Laboratories, Inc., requirements for fire door hardware. Coordinator may be omitted on exterior pairs of doors where either door will close independently regardless of the position of the other door. Coordinator may be omitted on interior pairs of non-labeled open where open back strike is used. Open back strike shall not be used on labeled doors. Paint coordinators to match door frames, unless coordinators are plated.

2.15 THRESHOLDS

- A. Conform to ANSI A156.21, mill finish extruded aluminum, except as otherwise specified. Inexisting construction, thresholds shall be installed in a bed of sealant with machine screws and expansion shields.

2.16 MISCELLANEOUS HARDWARE

- A. Access Doors (including Sheet Metal, Screen and Woven Wire Mesh Types): Except for fire-rated doors and doors to Temperature Control Cabinets, equip each single or double metal access door with Lock Type E76213, conforming to ANSI A156.5. Key locks as directed. Ship lock prepaid to the door manufacturer. Hinges shall be provided by door manufacturer.

- C. Mutes: Conform to ANSI A156.16. Provide door mutes or door silencers Type L03011, of white or light gray color, on each steel door frame. Furnish 3 mutes for single doors and 2 mutes for each pair of doors, except double-acting doors. Provide 2 mutes for each edge of sliding door which would contact door frame.

2.17 FINISHES

- A. Exposed surfaces of hardware shall have ANSI A156.18, finishes as specified below. Finishes on all hinges, pivots, closers, thresholds, etc., shall be as specified below under "Miscellaneous Finishes." For field painting (final coat) of ferrous hardware, see Section 09 91 00, PAINTING.
- B. 626 or 630: All surfaces on exterior and interior of buildings, except where other finishes are specified.
- C. Miscellaneous Finishes:
1. Hinges --interior doors: 652; except 630 at stainless steel doors
 2. Door Closers: Factory applied paint finish. Dull or Satin Aluminum color.
 3. Thresholds: Mill finish aluminum.
 4. Cover plates for floor hinges and pivots: 630.
 5. Other primed steel hardware: 652.
- D. Hardware Finishes for Existing Buildings: U.S. Standard finishes shall match finishes of hardware in (similar) existing spaces except where otherwise specified.
- E. Color of Plastic Items: See Section 09 06 00, SCHEDULE FOR FINISHES. Where colors other than chocolate brown or black are specified, color of core material may be different than color of face.

2.18 BASE METALS

Apply specified U.S. Standard finishes on different base metals as following:

Finish	Base Metal
652	Steel
626	Brass or bronze
630	Stainless steel

PART 3 - EXECUTION**3.1 HARDWARE HEIGHTS**

- A. For existing buildings locate hardware on doors at heights to match existing hardware. The Contractor shall visit the site, verify location of existing hardware and submit locations to Resident Engineer for approval.

3.2 INSTALLATION

- A. Closer devices, including those with hold-open features, shall be equipped and mounted to provide maximum door opening permitted by building construction or equipment. Closers shall be mounted regular arm. Where closers are mounted on doors they shall be mounted with sex nuts and bolts; foot shall be fastened to frame with machine screws.
- B. Substitute parallel arm or top jamb mounting for regular arm mounting where the following conditions occur:
1. Where door swing, in full open position, would be limited to less than 90 degrees due to partition construction and closer location.
 2. Where door to room opens outward into corridor, except bathroom which shall have closer installed parallel arm on exterior side of doors.
- C. Hinge Size Requirements:

Door Thickness	Door Width	Hinge Height
45 mm (1-3/4 inch)	900 mm (3 feet) and less	113 mm (4-1/2 inches)
45 mm (1-3/4 inch)	Over 900 mm (3 feet) but not more than 1200 mm (4 feet)	125 mm (5 inches)
35 mm (1-3/8 inch) (hollow core wood doors)	Not over 1200 mm (4 feet)	113 mm (4-1/2 inches)

- D. Hinge leaves shall be sufficiently wide to allow doors to swing clear of door frame trim.
- E. Where new hinges are specified for new doors in existing frames or existing doors in new frames, sizes of new hinges shall match sizes of existing hinges; or, contractor may reuse existing hinges provided hinges are restored to satisfactory operating condition as approved by Resident Engineer. Existing hinges shall not be reused on door openings

having new doors and new frames. Coordinate preparation for hinge cut-outs and screw-hole locations on doors and frames.

F. Hinges Required Per Door:

Doors 1500 mm (5 ft) or less in height	2 butts
Doors over 1500 mm (5 ft) high and not over 2280 mm (7 ft 6 in) high	3 butts

G. Fastenings: Suitable size and type and shall harmonize with hardware as to material and finish. Provide machine screws and lead expansion shields to secure hardware to concrete, ceramic or quarry floor tile, or solid masonry. Fiber or rawl plugs and adhesives are not permitted. All fastenings exposed to weather shall be of nonferrous metal.

3.3 HARDWARE SETS

Following sets of hardware correspond to hardware symbols shown on drawings. Where hardware set for a single door is specified for a pair of doors; equip each leaf of such pair of doors with set noted. Only those hardware sets that are shown on drawings will be required. Disregard hardware sets listed in specifications but not shown on drawings.

HARDWARE SETS	
<u>HW 1</u> Butts as required Door pull Push plate Closer C02011	<u>HW 2</u> Butts as required Door pull Push plate Closer C02011 Armor plate
<u>HW 3</u> Butts as required Door pull Push plate Closer C02011 Armor plate Holder C22511	<u>HW 4</u> Butts as required Door pull Push plate Closer C02011 Armor plate Holder C22511
<u>HW 5</u> Butts as required Door pull Push plate Closer C02051 Roller latch	<u>HW 6</u> Butts as required Door pulls Push plates Combination closer holder C00241 Armor plate

HARDWARE SETS	
<u>HW 7</u> Butts as required Push/Pull latch 1562 By Trimco	<u>HW 8</u> Butts as required Lock F17 Door pull Push plate Combination closer holder C00241 Armor plate
<u>HW 9</u> Butts as required Deadlock F16 x rectangular strike (no lip) Door pull Closer C02011 (on outside of bedroom) Note: No trim on room side of door except cylinder.	<u>HW 10</u> Butts as required Deadlock F18 x rectangular strike (no lip) Push pull plate J303 Note: No cylinder or trim on room side of door.
<u>HW 11</u> Butts as required Push plate Arm pull double base arm J400 Closer C02051	<u>HW 12</u> Butts as required Push-pull plate J303 Arm pull double base J400 Closer C02051
<u>HW 13</u> Butts as required Lock F07 or F86	<u>HW 14</u> Butts as required Lock F02-MOD or F76 Provide turn piece on both sides of lock
<u>HW 15</u> Butts as required Door closer C02011 Push-pull latch HL-6E, 628 by Glynn Johnson	<u>HW 16</u> Butts as required Door Closer C02011 Push-pull latch HL-6E, 628 by Glynn Johnson Deadlock cylindrical type with 70 mm (2-3/4 inch) backset with thumb turn on each side by Falcon No. D881 spec. Mount deadlock below latch at 840 mm (33 inches) to centerline of strike.
<u>HW 17</u> Butts as required Lock F13 Note: Install cylinder on toilet side of door.	<u>HW 18</u> Butts as required Lock F02 or F76 Provide emergency key
<u>HW 19</u> Butts as required Lock F13 or F82	<u>HW 20</u> 3 spring hinges, size as required Lock F07 or F86

HARDWARE SETS	
<u>HW 21</u> 2 spring hinges, size as required Latch F01 or F75	<u>HW 22</u> Butts as required Lock F14 or F91
<u>HW 23</u> Butts as required Lock F04 or F81	<u>HW 24</u> Butts as required Lock F08 Closer C02011
<u>HW 25</u> Butts as required Lock F05 or F84	<u>HW 26</u> Butts as required Locks F07 or F86 (lower left) Flush bolt (in edge of top leaf) to emerge in lower leaf
<u>HW 27</u> Butts as required Latch F01 or F75 (lower leaf) Flush bolts (in edge or top leaf) to engage in lower leaf	<u>HW 28</u> Butts as required 2 Flush bolts Lock F07 or F86
<u>HW 29</u> Butts as required 2 Flush bolts Latch F01 or F75	<u>HW 30</u> Butts as required 2 Flush bolts Lock F13 or F82
<u>HW 31</u> Butts as required Lock F04 or F81 (lower leaf) Flush bolts (in edge of top leaf to engage in lower leaf)	<u>HW 32</u> Butts as required 2 Flush bolts Lock F07 or F86 2 Armor plates
<u>HW 33</u> 6 Spring hinges 2 Automatic flush bolts Lock F07 or F86 Coordinator	<u>HW 34</u> Butts as required Lock F04 or F81 Armor plate
<u>HW 35</u> Pivot set (Rixon) 127-3/4 Emergency door Stop Stanley ES-1 Push-pull latch HL-6E, 628 by Glynn Johnson. 1 Dead-lock cylinder type with 125 mm (5 inch) backset with thumb turn on each side by Falcon No. D9670 Spec. Mount deadlock 70 mm (2 3/4 inches) below bottom of push pulls of latch set	<u>HW 36</u> 1 Pivot set (Rixon) 127-3/4 Emergency door Stop Stanley ES-1 Latch set F02-MOD or F76 Provide turn piece on both sides of lock.

HARDWARE SETS	
<u>HW 37</u> Bypassing door hardware Hager 9570 Series	<u>HW 38</u> Butts as required Latch F01 or F75 Closer C02011
<u>HW 39</u> Butts as required Latch F01 or F75 Closer C02051	<u>HW 40</u> Butts as required Lock F05 or F84 Closer C02051
<u>HW 41</u> Butts as required Latch F01 or F75 x 19 mm (3/4 inch) throw Closer C02011	<u>HW 42</u> Butts as required Lock F87 or 161 W-4 Closer C02011 Holder C22511
<u>HW 43</u> Butts as required Lock F07 or F86 Closer C02011	<u>HW 44</u> Butts as required Lock F13 or F82 Closer C02011
<u>HW 45</u> Butts as required Lock F04 or F81 Closer C02011	<u>HW 46</u> Butts as required Lock F14 or F91 Closer C02011
<u>HW 47</u> Butts as required Lock F05 or F84 2 Closers C02011 Flush bolts	<u>HW 48</u> Floor closer C16041 Intermediate Pivot C17321 Panic bolt Von Duprin 33EO
<u>HW 49</u> 2 Floor closers C16041 2 Intermediate pivots C17321 Panic bolt Von Duprin 3347 EO X 3347 TP 2 Holders C22511	<u>HW 50</u> Butts as required Lock F17 or E16071 Arm pull double base J400 Push-pull plate J3303 Concealed closer C25032 Holder C22511
<u>HW 51</u> Butts as required Lock F07 or F86 Closer C02011 Holder L11301	<u>HW 52</u> Butts as required Lock F04 or F81 Closer C02051
<u>HW 53</u> Butts as required Lock F04 or F81 Closer C02011 Armor plate	<u>HW 54</u> Butts as required Lock F14 or F91 Closer C02051

HARDWARE SETS	
<u>HW 55</u> Butts as required Lock F13 or F82 Closer C02051 Armor plate	<u>HW 56</u> Butts as required 2 Flush bolts Lock F13 or F82 1 Closer C02011 2 Holders L11301
<u>HW 57</u> Butts as required 2 Flush bolts Lock F13 or F82 2 Closers C02011 Coordinators	<u>HW 58</u> Butts as required Lock F13 or F82 2 Flush bolts 2 Closers C02011 2 Holders L11301
<u>HW 59</u> Butts as required 2 Flush bolts Lock F04 or F81 2 Closers C02011	<u>HW 60</u> Butts as required 2 Flush bolts Lock F07 or F86 2 Closers C02011 Coordinators
<u>HW 61</u> Butts as required 2 Automatic flush bolts Lock F07 or F86 Coordinator 2 Closers C02011	<u>HW 62</u> Butts as required Lock F04 or F81 X 19 mm (3/4 inch) throw 2 Automatic flush bolts 2 Closers C02011 Coordinator 2 Armor plates
<u>HW 63</u> Butts as required 2 Automatic flush bolts Latch F01 or F75 x 19 mm (3/4 inch) throw 2 Closers C02011 Coordinator 836 2 Armor plates	<u>HW 64</u> Butts as required 2 Automatic flush bolts Lock F07 or F86 2 Closers C02011 Coordinator 2 Armor plates
<u>HW 65</u> Butts as required 2 Automatic flush bolts Lock F91 2 Closer C02011 2 Armor plates Coordinator Note: Lock series 86 is not permitted under hardware set	<u>HW 66</u> Butts as required Latch F01 or F75 2 Automatic flush bolts 2 Closers C02011 Armor Plate Coordinator
<u>HW 67</u> Butts as required Lock F17 or E16071 Door pull Push-pull plate J300 Closer C02051	<u>HW 68</u> Butts as required Lock F17 or E16071 Door pull Push-pull plate J303 Closer C02011

HARDWARE SETS	
<u>HW 69</u> Butts as required Lock F17 or E16071 Door pull Push-pull plate J303 Closer C02051 Armor plate	<u>HW 70</u> Butts as required Lock F17 or E16071 Push plate Door pull Closer C02011 Armor plate Holder C22511
<u>HW 71</u> Butts as required Lock F17 or E16071 Push plate Door pull Closer C02011 Armor plate Holder L11301	<u>HW 72</u> Butts as required Lock F17 or E16071 Arm pull double base J400 Push-pull plate J303 Closer C02011 Armor plate Holder C22511
<u>HW 73</u> Butts as required Lock F17 or E16071 Door pull Push-pull plate J303 Closer C02011 Holder C22511	<u>HW 74</u> Butts as required Lock F17 or E16071 Arm pull double base J400 Push-pull plate J303 Closer C02051
<u>HW 75</u> Butts as required Lock Adams-Rite MS1851A x two cylinders Push Bar Type J500 Pull Bar Type J500 Closer C04011	<u>HW 76</u> Butts as required Lock F17 or E16071 Door pull Push-pull plate J303 Closer C02051
<u>HW 77</u> Butts as required 2 Automatic flush bolts Lock F17 or E16061 Lock F87 2 Closers C02011 2 Armor plates Coordinator	<u>HW 78</u> Butts required 2 Arm pulls double base J400 2 Push-pull plates J303 2 Armor plates 2 Closer C04011 2 Holders L11301
<u>HW 79</u> Butts as required Lock F17 or E16071 2 Flush bolts 2 Arm pulls double base J400 2 Push-pull plates J303 2 Armor plates 2 Closers C02011 2 Holders C22511	<u>HW 80</u> Butts as required 2 Flush bolts Lock F17 or E16061 2 Door pulls 2 Push-pull plates J303 2 Closers C02011 2 Armor plates 2 Holders L11301

HARDWARE SETS	
<u>HW 81</u> Butts as required Lock F17 or E16071 2 Flush bolts 2 Door pulls 2 Push-pull plates J303 2 Closers C02051	<u>HW 82</u> Butts as required Lock F17 or E16071 2 Flush bolts 2 Door pulls 2 Push-pull plates J303 2 Closers C02011 2 Holders C22511 2 Armor plates
<u>HW 83</u> Butts as required Panic bolt Type 1 - Function 09 (Always locked - Key Removable only when locked) Closer C02011	<u>HW 84</u> Butts as required Panic bolt Type 1 - Function 08 Closer C02011
<u>HW 85</u> Butts as required Panic bolt Type 1 - Function 08 Closer C02011	<u>HW 86</u> Butts as required Panic bolt Type 2 - Function 01 and Type 2 - Function 08 2 Closers C02011 2 Holders C22511
<u>HW 87</u> Butts as required Panic bolt Type 2 - Function 01 and Type 2 - Function 09 2 Closers C02011	<u>HW 88</u> Butts as required Panic bolt Type 2- Function 01 and Type 2 - Function 08 2 Closers C02011
<u>HW 89</u> Butts as required Panic bolt Type 2- Function 01 and Type 2 - Function 08 2 Closers C02011 2 Armor plates	<u>HW 90</u> Butts as required Panic bolt Type 2- Function 01 and Type 2 - Function 08 2 Combination closer holders C00241
<u>HW 91</u> Butts as required Panic bolt Type 2 - Function 01 and Type 2 - Function 08 2 Closers C02011 2 Armor plates 2 Holders L11301	<u>HW 92</u> Butts as required 2 Panic bolts Type 2 - Function 08 2 Combination closer holders C00241
<u>HW 93</u> Butts as required Panic bolt Type 2 - Function 01 and Type 2 - Function 08 2 Holders C22511 2 Closers C02011 2 Armor plates	<u>HW 94</u> Butts as required 2 panic bolts Type 2 - Function 01 2 Closers C02011

HARDWARE SETS	
<u>HW 95</u> Butts as required 2 Panic bolts Type 2 - Function 01 2 Combination closer holders C00241	<u>HW 96</u> Sliding door assembly (Hager 9885 Series) with adjustable top plate assembly - Sliding door lock (Adams-Rite MS 1850 ANSI - 505). Hager 9882 2 Dropping ring pulls J403
<u>HW 97</u> Sliding door assembly (Hager 9885 series) with adjustment top plate assembly Sliding door lock (Merit) 1781C Edge pull, Hager 9882 2 Flush cup pulls 3403	<u>HW 98</u> Sliding Door Hardware (Hager 9885 Series Complete, Edge pull, Hager 9882 2 Flush cup pulls J403
<u>HW 99</u> Floor Closer C16041 Intermediate pivot C17321 Push bars, Type J500 Pull bars, Type J500 Holder C22511	<u>HW 100</u> Floor Closer C16041 Intermediate Pivot C17321 Lock Adams-Rite MS1851A x two cylinder Door pull, Type J500 Push bars, Type J500 Holder C22511
<u>HW 101</u> Offset Pivot set C17121 Intermediate pivot C17321 Lock E16071 Closer C02051 Door pull Push-pull plate J303 Armor plate	<u>HW 102</u> Floor Closer C16041 Intermediate pivot C17321 Lock E16071 provide with a thumb turn cylinder outside Door pull Push-pull plate J303
<u>HW 103</u> Offset pivot set C17121 Intermediate pivot C17321 Closer C02051 Door pull Push plate Armor plate	<u>HW 104</u> Offset pivot set C17121 Intermediate pivot C17321 Door pull Push plate Closer C02051
<u>HW 105</u> Offset pivot set C17111 Intermediate pivot C17311 Closer C02011 Lock E16071 (Turn piece on both sides of lock) Door pull Push-pull plate J303	<u>HW 106</u> Offset pivot set C17111 Intermediate pivot C17311 Lock E16071 Door pull Push-pull plate J303 Closer LCN 4010 Armor plate Holder C22511

HARDWARE SETS	
<u>HW 107</u> Offset pivot set C17111 Intermediate pivot C17311 Lock E 16071 Door pull Push plate J300 Closer LCN 4010 size 6 Armor plate	<u>HW 108</u> Offset pivot set C17111 Intermediate pivot C17311 Door pull Push plate J300 Closer LCN 4010 size 6
<u>HW 109</u> 2 Offset pivot sets C17121 2 Intermediate pivots C17321 Lock E16071 2 Flush bolts 2 Door pulls J 405 2 Push-pulls J303 2 Armor plates 2 Closers LCN 4010 size 6 2 Holders C22511 1 Lead lined astragal Coordinator	<u>HW 110</u> Floor closer C16041 Intermediate pivot C17321 Panic bolt Von Duprin 33 L x 20
<u>HW 111</u> Hardware as required Magnetic lock unit, Securitron iMXD-24 Power Supply - BPS-24-1 Key Pad - DK11 Push Button - PB-2E	<u>HW 112</u> Floor closer C16011 2 Push plates 2 Armor plates J303 Holder C21511 (Double acting)
<u>HW 113</u> Concealed closer C75062 2 Push plates J303 2 Armor plates Holder 1168	<u>HW 114</u> Floor closer 2 Push plates 2 Armor plates
<u>HW 115</u> Floor closer with hold open Lock F17 or E16071 2 Flush bolts 4 Push-pull plates J303 4 Armor plates	<u>HW 116</u> Floor closer Lock F17 or E16071 2 Push-pull plates J303 2 Armor plates
<u>HW 117</u> Floor closer Lock F17 Intermediate pivot C17321 Door pull Push plate	

HARDWARE SETS	
<u>HW 119</u> Butts as required 2 Door pulls Armor plate Note: For automatic door operator, see specification Section 08 71 13.	<u>HW 120</u> Butts as required Lock F17 or E16071 Door pull Armor plate Note: For automatic door operator, see specification Section 08 71 13.
<u>HW 121</u> Bi-parting door lock E8291	<u>HW 122</u> Sliding door lock - E16131 2 Flush cup pulls 459 Note: For automatic door operator, see specification Section 08 71 13.
<u>HW 123</u> 2 Lock (Adams-Rite) MS1861 Cylinder outside thumbturn inside 4 Pull bars J500 Note: For automatic door operator, see specification Section 08 71 13.	<u>HW 124</u> Lock (Adams-Rite) MS1861 Cylinder outside thumbturn inside Pull bar J500 Note: For automatic door operator, see specification Section 08 71 13.
<u>HW 125</u> 4 Pull bars J500 Note: For automatic door operator, see specification Section 08 71 13.	<u>HW 126</u> Butts as required Lock F17 or E16071 2 Push-pull plates J300 2 Door pulls 2 Armor plates 1 Push Bolt Coordinator Note: For automatic door operator, see specification Section 08 71 13.
<u>HW 127</u> 2 Flush cup pulls J403 Note: For automatic door operator, see specification Section 08 71 13.	<u>HW 128</u> Butts as required 2 Door pulls 2 Push plates 2 Armor plates Note: For automatic door operator, see specification Section 08 71 13.
<u>HW 129</u> Butts as required Armor plate Push plate Door pull J303 Note: For automatic door operators, see specification Section 08 71 13.	<u>HW 130</u> Butts as required 2 Locks E16071 or F17 in top rail 2 Push-pull plates J303 2 Armor plates Note: For automatic door operators, see specification Section 08 71 13.

HARDWARE SETS	
<u>HW 131</u> Biparting door lock Adams-Rite MS1850-A-505 Cylinder outside thumbturn inside Note: For automatic door operators, see specification Section 08 71 13.	<u>HW 132</u> Butts as required Lock F07 or F86 Electrical door release (Folger Adam 310-2 ¾") Closer C02011
<u>HW 133</u> Butts as required Lock F07 or F86 Jimmyproof deadlock (type E06261) 2 Cylinders Closer C02011	<u>HW 134</u> Butts as required Push-pull Corbin Russwin H10 Closer C02011 Armor plate
<u>HW 135</u> Butts as required Panic bolt Type 2 - Function 01 and Type 2 - Function 01 2 Closers C02051	<u>HW 136</u> 2 Floor closer Lock F17 or E16071 2 Flush bolts 1049 2 Push bars
<u>HW 137</u> Butts as required Lock (Adams-Rite) MS1851A x two cylinders 2 Flush bolts (Modified) 2 Pull bars J500 2 Push bars J500 2 Closers C02011 2 Holders C22511	<u>HW 138</u> Butts as required Lock (Adams-Rite) MS1851A x two cylinders Pull bar J502 Push bar J502 Closer C02011 Holder C22511
<u>HW 139</u> Butts as required Lock F87 Closer C02051 2 Flush bolts and 1 coordinator (For pairs of doors only)	<u>HW 140</u> Butts as required Lock F02-MOD, provide turnpiece on both side of lock Closer C02011

HARDWARE SETS	
<u>HW 141</u> Sliding Door Hardware Set: 2 Hangers (HW) No.126 Track (RW) No. 30 1/2-length as required x end and intermediate brackets x end closures 2 Stay rollers (RW) No. 68 2 Flush pulls (RW) No. 535-4 Jimmyproof deadlock-cylinder x turnpiece, mounted on jamb. Strike on face of door. Tamperproof fastenings. Table on Sliding Doors: Ball bearing drop forged Wheels - End stops Trucks on metal doors Hangers on wood doors	<u>HW 142</u> Folding Door Hardware Set: (Hager 9870 Series) 2 Flush pulls J403 Lock E16151 cylinder outside thumb turn inside
<u>HW 143</u> Floor Closer 2 Push-pull plates J303	<u>HW 144</u> 2 Floor closers 2 Flush bolts Lock F17 or E16071 4 Push-pull plates J303 2 Holders C26513
<u>HW 145</u> Butts as required Lock F14 or F91	<u>HW 146</u> Butts as required Lock F07 x 19 mm (3/4 inch) throw 2 Automatic flush bolts 2 Closers C72011 Coordinator 836
<u>HW 147</u> Butts as required Lock E16071 or F17 2 Flush bolts 2 Door pulls 2 Push plates 2 Combination /closer holders C00241 Coordinator 836	<u>HW 148</u> Butts as required Latch F01 or F75 Combination closer holders C00241
<u>HW 149</u> Butts as required Lock F13 or F82 Combination closer holder C00241	<u>HW 150</u> Butts as required 2 Automatic flush bolts 2 Combination closer holders C00241 Coordinator 836
<u>HW 151</u> Butts as required Lock F05 or F84 Combination closer holders C00241	<u>HW 152</u> Butts as required Lock F14 or F91 Combination closer holder C00241

HARDWARE SETS	
<u>HW 153</u> Butts as required Lock F04 or F81 Combination closer holder C00241	<u>HW 154</u> Butts as required 2 Flush bolts Lock F14 or F91
<u>HW 155</u> Panic bolt Adams-Rite 8600 series Note: For automatic door operator, see specification Section 08 71 13.	<u>HW 156</u> Panic bolt Von Duprin 3347 TP X 3347 EO Delete bottom latch bolt Note: For automatic door operator see specification Section 08 71 13.
<u>HW 157</u> Butts as required (Hospital tip) Lockset (Unican Lock Co.) 1001 - Mechanical lock with 5-button combination and 19 mm (3/4 inch) throw latch bolt Lock E16071 with 19 mm (3/4 inch) throw deadbolt - Mount deadlock at 1500 mm (60 inches) to centerline of strike from finished floor on this hardware set only Closer C02011 Flush bolts Ives 454 by 300 mm (12 inch) for pairs of doors.	<u>HW 158</u> 2 Locks (Adams-Rite) MS1861A cylinder outside thumb turn inside 4 Push-pull bars J500
<u>HW 160</u> (Opposite Swing Aluminum Entrance Doors) INSWINGING DOORS: Lock (Adams-Rite) MS 1851 Cylinder outside thumb turn inside 2 Pull bars J500 OUTSWINGING DOORS: Panic bolt Von Duprin 3347 TP Delete bottom latch bolt Note: For automatic door operator see Specification Section, 08 71 13	<u>HW 161</u> 2 Pivots set C17162 2 Intermediate pivots C17321 4 Push-pull bars J500 2 Door closers 4113 H cushion-stop by LCN
<u>HW 162</u> 2 Cylinders as required. Balance of hardware by door manufacturer.	<u>HW 163</u> <u>Continuous hinge</u> <u>Lock F07 (Storeroom)</u> <u>Electric strike</u> <u>Dead bolt</u> <u>Card reader with PIN or Biometric</u> <u>Closer</u>

HARDWARE SETS	
<u>HW 164</u> <u>Continuous hinge</u> <u>Lock F07 (Storeroom)</u> <u>Electric strike</u> <u>Card reader</u> <u>Door monitor with alarm</u> <u>Closer</u>	<u>HW 165</u> <u>Butts as required</u> <u>Card reader or push-button</u> <u>combination lock</u> <u>Closer</u>
<u>HW 166 (15 minute FE rating)</u> <u>Continuous hinge</u> <u>Lock F07 (Storeroom)</u> <u>Electric strike</u> <u>Card reader</u> <u>Closer</u>	<u>HW 167</u> <u>Continuous hinge</u> <u>E01 alarmed exit device, Type 3</u> <u>Closer</u>
<u>HW 168</u> <u>Continuous hinge</u> <u>Card reader</u> <u>Magnetic lock</u> <u>Door pull</u> <u>Request to exit button</u> <u>E01 Exit device</u> <u>Closer</u>	

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